

## **REMARKS**

Reconsideration of the withdrawal of this case is respectfully requested. Claims 1-6 and 10-72 are currently pending. No claims have been amended herein. No claims are canceled herein.

### **WITHDRAWAL FROM ISSUE**

It should be respectfully noted that the Applicants maintain the position set out in their previous responses.

### **ORIGINAL SPECIFICATION IN SUPPORT OF THE CLAIMS AS AMENDED**

#### **SUPPORT FROM SPECIFICATION FOR LATEST AMENDMENTS AND TRANSITION POINT**

As pointed out previously, all of the data used in the last Amendment After Final was data found and presented in the original specification as filed. It is also important to reiterate that the original data remains the same from the filing of the specification. The chief differences with the prior art, and the apparent current difficulty is in the nature of the presentation of the data, not the data itself. Relative to showing the transition point and/or the TMP the graphs were not all presented to provide this information in an easily accessible manner. However, this information is implicit in the types of experiments done by the Applicants and those in the field.

As is known in the microfiltration field, beyond a critical concentration and pressure the fluid feedstream forms a separate phase where the Brownian motion of the solute molecules is “frozen”. This phase transition point differentiates between the true solution behavior (disordered phase) and a cake type behavior (ordered phase). In classical studies on ultrafiltration, the solute concentration at this point is often termed the ‘gel concentration.’ In terms of microfiltration an increase of one or more of the four operating parameters (TMP, pore size, pore size distribution and feedstream concentration) results in higher pore blocking propensity. The influences of these four operating parameters on the cake property are different, but each are involved during any

microfiltering process. Scientists, and inventors, must pay attention to each of them during every experiment if they are to optimize their filtration processes.

In the current invention, Graph B and F show the relationship between transmembrane pressure (TMP) and Mass Flux (GMH), a measure of liquid flux and productivity. When simplifying this graph, productivity was not graphed by the inventors simultaneously, leaving TMP and liquid flux (LMH). Example 1 and 3 in the response section shows the original data from the patent application in this simplified manner. In addition to the liquid flux, the clean water flux is also graphed along side of the data. The transition point, implicit in the data, was calculated and presented in the Amendment After Final by initially drawing a line parallel with the liquid flux maximum ( $J_{max}$ ) and intersecting the clean water flux curve. A tangent line is then drawn, equally dissecting the angle between the clean water flux curve and the line drawn parallel to the liquid flux maximum ( $J_{max}$ ). The point at which the tangent line intersects the liquid flux curve represents the transition point of the curve. In the current invention the transition point pressure can be easily seen at 7 psig for figure 1 and 10 psig for figure 3. The conclusion which may be made from this information is that the original application, as well as the response, both show optimal transmembrane pressure is above the transition point of the curve. This is an important piece of information as it further differentiates GTC's invention from others.

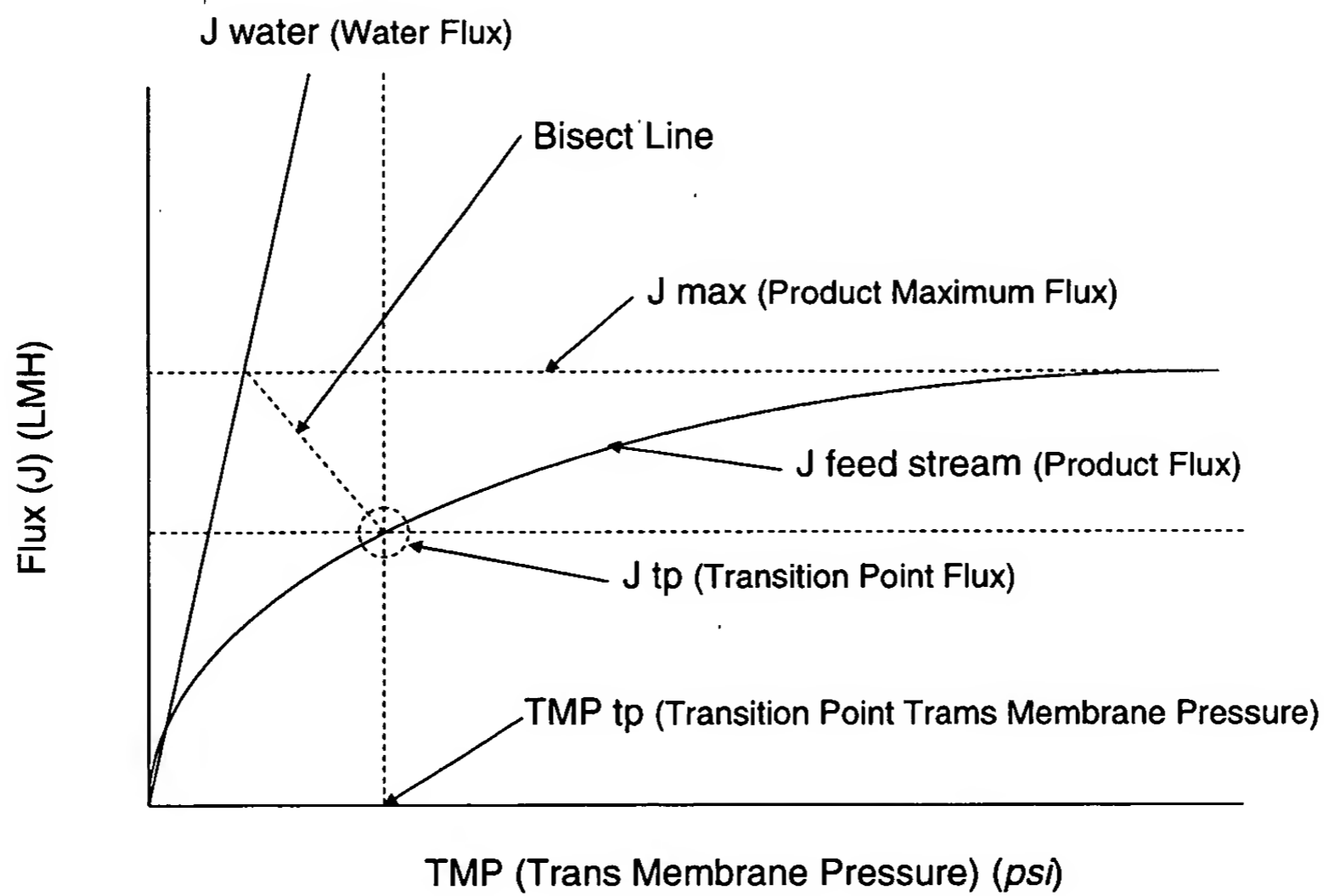
The data shows the optimal cross-flow rate, operating temperature, concentration factor, and the transmembrane pressure (TMP) for the separation. Most importantly, the TMP was found to be optimal at approximately 15psig for the process described (Fig. 7), and as presented in the last response. This optimal psig would NECESSARILY entail a transition point pressure for flux.

Unfortunately, when the data was presented in this manner it did not clearly demonstrate the differences in operating conditions between the ones used by Van Reis and GTC. This was because the inventors presented their data on graphs in one way and van Reis another.

**Application References:** [All from Original Specification: Figs. 1, 3 and 7; para 87, p. 28 – Optimal Parameters – *above* van Reis; Graphs B, E and F ; para 79, p. 24 – where the current invention “operates”; para 117, p. 48 directing how to adjust the parameters of the invention in the region in 100% of van Reis]. As previously stated, Applicants will provide such Declarations from the Inventors for the examples/data points presented. The short response time

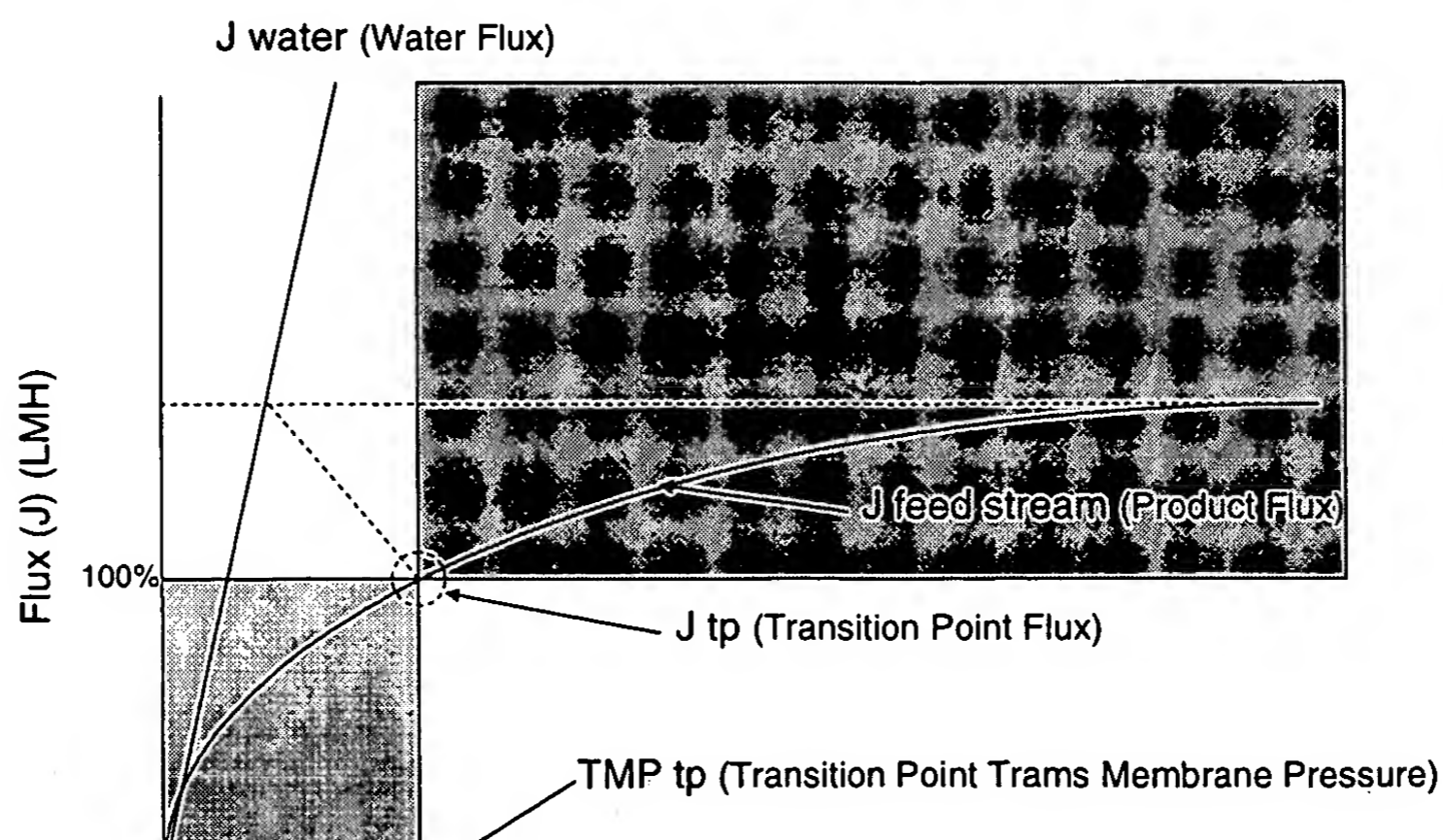
for this action did not allow these to be generated. Raw data and notebooks will also be provided on request.

### “Diagram # A



In Diagram # A, some of the terms for Claim # 1 of the patent application are defined. With in a TMP vs. Flux graph, two major lines are draws: the Water Flux (J water) and the Product Flux (J feed stream). The Product Flux curve defines a maximum product flux (J max) which intersects the water flux line. At this point a bisecting line is drawn from the intersection of the two lines (J water and J max) to the Product Flux curve. The point at which the bisect intersects the J feed stream curve is defined as the transition point flux (J tp). A line is dropped directly down to the X axis to define the transition point transmembrane pressure (TMP tp).

### Diagram # B



Applicant is not aware of any fees associated with this Reply to the Notice of Withdrawal. However, the Commissioner is authorized to charge any fee which may now or hereafter be due for this application to GTC Biotherapeutics' Deposit Account No. 502092.


Applicants respectfully submit that the pending claims of this application are in condition for allowance, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicant's attorney would advance the prosecution of the case to finality, the Examiner is invited to telephone the undersigned at the number given below.

Early and favorable action is earnestly solicited.

Respectfully Submitted,

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By:

  
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